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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/933,535  | 08/20/2001  | Edward O. Shaffer II | 60393B              | 5814             |
| 109   | 7590        | 02/14/2005           | EXAMINER            |                  |
| THE DOW CHEMICAL COMPANY<br>INTELLECTUAL PROPERTY SECTION<br>P. O. BOX 1967<br>MIDLAND, MI 48641-1967 |             |                      | SARKAR, ASOK K      |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2829                |                  |

DATE MAILED: 02/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/933,535

Applicant(s)

SHAFFER ET AL.

Examiner

Asok K. Sarkar

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 24-28 and 32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-28 and 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 24 – 28 and 32 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 24 – 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyama, JP 61247756.

Regarding claim 24, Miyama teaches a composition comprising the hydrolyzed or partially hydrolyzed product of a combination of silanes comprising

(a) an alkoxysilane or acyloxy silane having at least one hydrocarbon group attached directly to the Si atom which hydrocarbon group contains a non-aromatic, unsaturated carbon to carbon bond in an 50 to 95 mole percent based on total moles of silanes present, and

(b) an alkoxysilane or acyloxysilane having at least one hydrocarbon group attached directly to the Si atom which hydrocarbon group includes an aromatic ring (see the attached English Abstract and the chemicals used in the composition).

Regarding claim 25, Miyama teaches the composition combination further

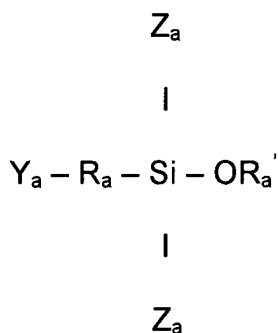
Art Unit: 2829

comprises (c) an alkoxysilane or acyloxysilane having at least one C<sub>1</sub> - C<sub>6</sub> alkyl group attached directly to the Si atom, a compound methyltrimethoxy silane (see the attached English Abstract and the chemicals used in the composition).

Regarding claim 26, Miyama teaches the composition wherein the first silane (a) is a vinyl acetoxysilane, vinyltrimethoxysilane, and the second silane (b) is an arylalkoxysilane, phenyltrimethoxysilane (see the attached English Abstract and the chemicals used in the composition).

Regarding claim 27, Miyama teaches the composition wherein combination comprises

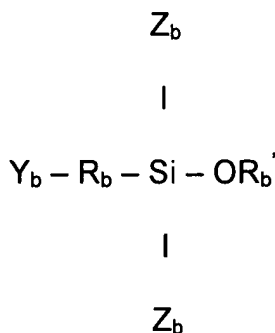
(a) 50 – 95 mole% silanes of the formula



wherein R<sub>a</sub> is C<sub>1</sub> – C<sub>6</sub> alkylidene, C<sub>1</sub> – C<sub>6</sub> alkylene, arylene, or a direct bond; Y<sub>a</sub> is C<sub>1</sub> – C<sub>6</sub> alkyl, C<sub>1</sub> – C<sub>6</sub> alkenyl, C<sub>2-6</sub> alkynyl, C<sub>6</sub> – C<sub>20</sub> aryl, 3-methacryloxy, 3-acryloxy, 3-nminoethyl-nmino, 3-nmino, -SiZ<sub>a</sub><sub>2</sub>OR<sub>a</sub>', or -OR<sub>a</sub>'; R<sub>a</sub>' is independently, in each occurrence, a C<sub>1</sub> – C<sub>6</sub> alkyl or C<sub>2</sub> – C<sub>6</sub> acyl; and Z<sub>a</sub> is C<sub>1</sub> – C<sub>6</sub> alkyl, C<sub>2</sub> – C<sub>6</sub> alkenyl, C<sub>2-6</sub> alkynyl, C<sub>6-20</sub> aryl, or -OR<sub>a</sub>', provided at least one of Z<sub>a</sub> or the combination R<sub>a</sub>-Y<sub>a</sub> comprises a non-aromatic carbon to carbon bond unsaturation,

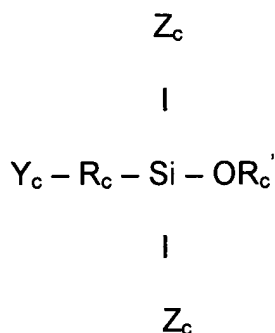
(b) 5 to 40 mole percent

Art Unit: 2829



wherein  $R_b$  is  $C_1 - C_6$  alkylidene,  $C_1 - C_6$  alkylene, arylene, or a direct bond;  $Y_b$  is  $C_1 - C_6$  alkyl,  $C_2 - C_6$  alkenyl,  $C_2 - C_6$  alkynyl,  $C_6 - C_{20}$  aryl, 3-methacryloxy, 3-acryloxy, 3-nminoethyl-nmino, 3-amino,  $-SiZb_2OR_b'$ , or  $-OR_b'$ ;  $R_b'$  is independently, in each occurrence, a  $C_1 - C_6$  alkyl or  $C_2 - C_6$  acyl; and  $Z_b$  is  $C_1 - C_6$  alkyl,  $C_2 - C_6$  alkenyl,  $C_{2-6}$  alkynyl,  $C_{6-20}$  aryl, or  $-OR_b'$ , provided at least one of  $Z_b$  or the combination of  $R_b-Y_b$  comprises an aromatic ring, and

(c) 0 to 45 mole percent



wherein  $R_c$  is  $C_1 - C_6$  alkylidene,  $C_1 - C_6$  alkylene, arylene, or a direct bond;  $Y_c$  is  $C_1 - C_6$  alkyl,  $C_2 - C_6$  alkenyl,  $C_{2-6}$  alkynyl, a  $C_6 - C_{20}$  aryl, 3-methacryloxy, 3-acryloxy, 3-nminoethyl-amino, 3-amino,  $-SiZ_{c2}OR_c'$ , or  $-OR_c'$ ;  $R_c'$  is independently, in each occurrence, a  $C_1 - C_6$  alkyl or  $C_2 - C_6$  acyl; and  $Z_c$  is  $C_1 - C_6$  alkyl,  $C_2 - C_6$  alkenyl,  $C_{2-6}$  alkynyl,  $C_{6-20}$  aryl, or  $-OR_c'$ , provided at least one of  $Z_c$  or the combination of

Art Unit: 2829

R<sub>c</sub> - Y<sub>c</sub> comprises an alkyl (see the attached English Abstract and the chemicals used in the composition).

Regarding claim 28, Miyama teaches the composition is an adhesion promoter since he teaches the composition is for adhesives (see the attached English Abstract and the chemicals used in the composition).

4. Claims 24 – 28 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Marzocchi, US 3,837,897.

Regarding claim 24, Marzocchi teaches a composition comprising the hydrolyzed or partially hydrolyzed product of a combination of silanes comprising

(a) an alkoxysilane or acyloxy silane having at least one hydrocarbon group attached directly to the Si atom which hydrocarbon group contains a non-aromatic, unsaturated carbon to carbon bond in an 50 to 95 mole percent based on total moles of silanes present, and

(b) an alkoxysilane or acyloxysilane having at least one hydrocarbon group attached directly to the Si atom which hydrocarbon group includes an aromatic ring (see the descriptions in column 3 and 4 and examples especially 4).

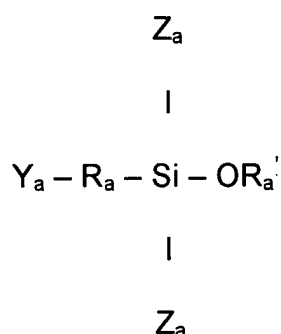
Regarding claim 25, Marzocchi teaches the composition combination further comprises (c) an alkoxysilane or acyloxysilane having at least one C<sub>1</sub> - C<sub>6</sub> alkyl group attached directly to the Si atom (see the descriptions in column 3 and 4).

Art Unit: 2829

Regarding claim 26, Marzocchi teaches the composition wherein the first silane (a) is a vinyl acetoxysilane, and the second silane (b) is an arylalkoxysilane (see the descriptions in column 3 and 4).

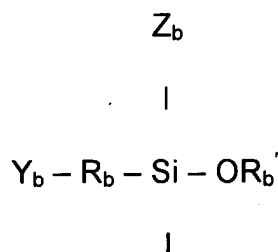
Regarding claim 27, Marzocchi teaches the composition wherein combination comprises

(a) 50 – 95 mole% silanes of the formula



wherein  $R_a$  is  $C_1 - C_6$  alkylidene,  $C_1 - C_6$  alkylene, arylene, or a direct bond;  $Y_a$  is  $C_1 - C_6$  alkyl,  $C_1 - C_6$  alkenyl,  $C_{2-6}$  alkynyl,  $C_6 - C_{20}$  aryl, 3-methacryloxy, 3-acryloxy, 3-nminoethyl-nmino, 3-nmino,  $-SiZ_a2OR_a'$ , or  $-OR_a'$ ;  $R_a'$  is independently, in each occurrence, a  $C_1 - C_6$  alkyl or  $C_2 - C_6$  acyl; and  $Z_a$  is  $C_1 - C_6$  alkyl,  $C_2 - C_6$  alkenyl,  $C_{2-6}$  alkynyl,  $C_{6-20}$  aryl, or  $-OR_a'$ , provided at least one of  $Z_a$  or the combination  $R_a-Y_a$  comprises a non-aromatic carbon to carbon bond unsaturation,

(b) 5 to 40 mole percent



Art Unit: 2829

$$Z_b$$

wherein  $R_b$  is  $C_1 - C_6$  alkylidene,  $C_1 - C_6$  alkylene, arylene, or a direct bond;  $Y_b$  is  $C_1 - C_6$  alkyl,  $C_2 - C_6$  alkenyl,  $C_2 - C_6$  alkynyl,  $C_6 - C_{20}$  aryl, 3-methacryloxy, 3-acryloxy, 3-nminoethyl-nmino, 3-amino,  $-SiZb_2OR_b'$ , or  $-OR_b'$ ;  $R_b'$  is independently, in each occurrence, a  $C_1 - C_6$  alkyl or  $C_2 - C_6$  acyl; and  $Z_b$  is  $C_1 - C_6$  alkyl,  $C_2 - C_6$  alkenyl,  $C_{2-6}$  alkynyl,  $C_{6-20}$  aryl, or  $-OR_b'$ , provided at least one of  $Z_b$  or the combination of  $R_b-Y_b$  comprises an aromatic ring, and

(c) 0 to 45 mole percent

$$Z_c$$

$$|$$

$$Y_c - R_c - Si - OR_c'$$

$$|$$

$$Z_c$$

wherein  $R_c$  is  $C_1 - C_6$  alkylidene,  $C_1 - C_6$  alkylene, arylene, or a direct bond;  $Y_c$  is  $C_1 - C_6$  alkyl,  $C_2 - C_6$  alkenyl,  $C_{2-6}$  alkynyl, a  $C_6 - C_{20}$  aryl, 3-methacryloxy, 3-acryloxy, 3-nminoethyl-amino, 3-amino,  $-SiZ_{c2}OR_c'$ , or  $-OR_c'$ ;  $R_c'$  is independently, in each occurrence, a  $C_1 - C_6$  alkyl or  $C_2 - C_6$  acyl; and  $Z_c$  is  $C_1 - C_6$  alkyl,  $C_2 - C_6$  alkenyl,  $C_{2-6}$  alkynyl,  $C_{6-20}$  aryl, or  $-OR_c'$ , provided at least one of  $Z_c$  or the combination of  $R_c - Y_c$  comprises an alkyl (see the descriptions in column 3 and 4).

Regarding claim 28, Marzocchi teaches the composition is an adhesion promoter since he teaches the composition is for adhesion as coupling agents (see the descriptions in column 3 and 4).



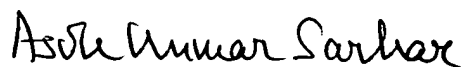
Regarding claim 32, Marzocchi teaches the composition is cured at temperatures of at least 180°C in column 4, line 35.

**Conclusion**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Asok K. Sarkar whose telephone number is 571 272 1970. The examiner can normally be reached on Monday - Friday (8 AM- 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William B. Baumeister can be reached on 571 272 1722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Asok K. Sarkar  
February 7, 2005

Primary Examiner